

REMARKS/ARGUMENTS

By this Amendment, claims 5, 9 and 13-20 have been cancelled, claims 3, 6, 8 and 10-12 have been amended, and claim 21 has been added. Claim 4 has been withdrawn from consideration. Accordingly, claims 3-4, 6-8, 10-12 and 21 are pending in the present application.

Claims 13-18 stand rejected under 35 U.S.C. §112, second paragraph. With the cancellation of claims 13-18, this rejection is deemed moot.

Claims 19 and 20 stand rejected under 35 U.S.C. §102(b) as being anticipated by Hidaka, et al (US '091). Claims 19 and 20 stand rejected under 35 U.S.C. §102(b) as being anticipated by Ishikawa, et al (JP '804). With the cancellation of claims 19 and 20, these rejections are deemed moot.

Claims 3, 5-6 and 13 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Lithgow or Isoda in view of Ishikawa, et al. (JP '804). This rejection is deemed moot with respect to claims 5 and 13 due to their cancellation. Claim 7 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Lithgow or Isoda in view of Ishikawa, et al. (JP '804), and further in view of Fukazawa. Applicants respectfully traverse these rejections with respect to claims 3 and 6-7.

Among the limitations of independent claim 3 which are neither disclosed nor suggested in the prior art of record is a coaxial resonator which includes both an inner conductor having "a multi-layer electrode structure in which conductor layers and dielectric layers are alternately laminated, an outermost conductor layer of the inner conductor is greater in thickness than the other conductor layers of the inner

conductor, and the other conductor layers of the inner conductor are substantially equal in thickness", and an outer conductor having "a multi-layer electrode structure in which conductor layers and dielectric layers are alternately laminated, an outermost conductor layer of the outer conductor is greater in thickness than the other conductor layers of the outer conductor, and the other conductor layers of the outer conductor are substantially equal in thickness."

As admitted on page 4 of the Office Action, neither Lithgow nor Isoda, either alone or combined, teach or suggest that either the inner conductor or the outer conductor are formed by alternately laminating conductor layers and dielectric layers, and that the respective outermost conductor layers of the inner and outer conductors have a greater thickness than the other conductor layers.

Ishikawa, et al. (JP '804) does not remedy any of the deficiencies of Lithgow and/or Isoda. Nowhere within Ishikawa, et al. (JP '804) is it disclosed, let alone suggested that an outermost conductor layer of the inner and outer conductors is greater in thickness than the other conductor layers, and the other conductor layers of the inner and outer conductors are substantially equal in thickness, as required by independent claim 3.

In rejecting the claims, the Examiner has relied upon drawing Figure 33c of Ishikawa, et al. (JP '804) as showing a multilayered electrode structure having an outermost conductor layer greater in thickness than the other conductor layers. Applicants respectfully disagree.

It is well established that when a reference does not disclose that the drawings are to scale and is silent as to dimensions, arguments based on measurement

of the drawing features are of little value. See Hockerson-Halberstadt, Inc. v. Avia Group Int'l, 222 F.3d 951, 956, 55 USPQ2d 1487, 1491 (Fed. Cir. 2000) (The disclosure gave no indication that the drawings were drawn to scale. "[I]t is well established that patent drawings do not define the precise proportions of the elements and may not be relied on to show particular sizes if the specification is completely silent on the issue."). See MPEP 2125. ✓

Nowhere within Ishikawa, et al. (JP '804) is it disclosed or suggested that the drawings are to scale. In addition, nowhere within Ishikawa, et al. (JP '804) is there a description of the relationship between the thickness of the conductor layers. Therefore, it is respectfully submitted that a *prima facie* case of obviousness has not been established. Since Ishikawa, et al. (JP '804) is silent as to the relative dimensions of the conductor layers, even if one were to combine the teachings of Lithgow, Isoda and/or Ishikawa, et al. (JP '804), one would not arrive at the coaxial resonator defined in independent claim 3. Accordingly, it is respectfully submitted that independent claim 3 patentably distinguishes over the art of record.

Fukazawa does not remedy any of the deficiencies of Lithgow, Isoda and/or Ishikawa, et al. (JP '804). Nowhere within Fukazawa is it disclosed, let alone suggested that an outermost conductor layer of the inner and outer conductors is greater in thickness than the other conductor layers, and the other conductor layers of the inner and outer conductors are substantially equal in thickness.

Claims 6 and 7 depend either directly or indirectly from independent claim 3 and include all of the limitations found therein. Each of these dependent claims include additional limitations which, in combination with the limitations of the claims from

which they depend, are neither disclosed nor suggested in the prior art of record. Accordingly, claims 6 and 7 are likewise patentable.

Claims 8-12 and 14-18 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Lithgow or Isoda in view of Ishikawa, et al. (JP '804), and further in view of Tada, et al. This rejection is deemed moot with respect to claims 9 and 14-18 due to their cancellation. Applicants respectfully traverse this rejection with respect to claims 8 and 10-12.

Among the limitations of independent claims 8 and 10-12 which are neither disclosed nor suggested in the prior art of record is a coaxial resonator which includes both an inner conductor having "a multi-layer electrode structure in which conductor layers and dielectric layers are alternately laminated, an outermost conductor layer of the inner conductor is greater in thickness than the other conductor layers of the inner conductor, and the other conductor layers of the inner conductor are substantially equal in thickness", and an outer conductor having "a multi-layer electrode structure in which conductor layers and dielectric layers are alternately laminated, an outermost conductor layer of the outer conductor is greater in thickness than the other conductor layers of the outer conductor, and the other conductor layers of the outer conductor are substantially equal in thickness."

As described above, neither Lithgow, Isoda and/or Ishikawa, et al. (JP '804), either alone or combined, teach or suggest that an outermost conductor layer of the inner and outer conductors is greater in thickness than the other conductor layers, and the other conductor layers of the inner and outer conductors are substantially equal in thickness.

Tada, et al. does not remedy any of the deficiencies of Lithgow, Isoda and/or Ishikawa, et al. (JP '804). Nowhere within Tada, et al. is it disclosed, let alone suggested to form a multi-layer electrode structure in which an outermost conductor layer of the inner and outer conductors is greater in thickness than the other conductor layers, and the other conductor layers of the inner and outer conductors are substantially equal in thickness as required by independent claims 8 and 10-12. Accordingly, it is respectfully submitted that independent claims 8 and 10-12 patentably distinguishes over the art of record.

Claims 3 and 5-20 have been provisionally rejected under the judicially created doctrine of obviousness-type double patenting a being unpatentable over claims 1-12 of co-pending application Serial No. 09/707,264 in view of Lithgow or Isoda. This rejection is deemed moot with respect to claims 5, 9 and 13-20 due to their cancellation. Applicants respectfully request that this provisional obviousness-type double patenting rejection be held in abeyance until final resolution of the issues remaining in this application.

Claims 3 and 5-12 have been provisionally rejected under 35 U.S.C. §103(a) as being obvious over co-pending application Serial No. 09/707,264. Application Serial No. 09/707,264 and the present application were, at the time the present invention was made, owned by Murata Manufacturing Co., Ltd. and subject to an obligation of assignment to Murata Manufacturing Co., Ltd. Accordingly, Applicants respectfully request that this provisional obviousness rejection be withdrawn.

New claim 21 has been added to more fully cover the scope of the present invention. Consideration and allowance of claim 21 is respectfully requested.

Claim 4 was previously withdrawn from consideration in a species Restriction Requirement. As claim 4 depends from allowable generic claim 3, it is respectfully requested that claim 4 be considered and allowed along with the other pending claims in the present application.

In view of the foregoing, favorable consideration of the amendments to claims 3, 6, 8 and 10-12, favorable consideration of new claim 21, and allowance of the application with claims 3-4, 6-8, 10-12 and 21 is respectfully and earnestly solicited.

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Respectfully submitted,

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APPENDIX A
Version With Markings To Show Changes Made ✓
37 CFR 1.121(b)(1)(iii) AND (c)(1)(ii)

In the Claims:

3. (Amended) A coaxial resonator comprising:
an inner conductor formed on an outer surface of a columnar element;
a dielectric element having a hole formed therein, the columnar element being disposed in the hole; and
an outer conductor formed on an outer surface of the dielectric element, wherein the inner conductor has a multi-layer electrode structure in which conductor layers and dielectric layers are alternately laminated, [and wherein] an outermost conductor layer of the inner conductor is greater in thickness than the other conductor layers of the inner conductor, and the other conductor layers of the inner conductor are substantially equal in thickness, and
wherein the outer conductor has a multi-layer electrode structure in which conductor layers and dielectric layers are alternately laminated, an outermost conductor layer of the outer conductor is greater in thickness than the other conductor layers of the outer conductor, and the other conductor layers of the outer conductor are substantially equal in thickness.
6. (Amended) The coaxial resonator according to Claim [5] 3 or 4, wherein phase constants of lines for the conductor layers are substantially equal in the inner conductor and the outer conductor.

8. (Amended) A filter comprising:

a plurality of coaxial resonators, each coaxial resonator comprising:

an inner conductor formed on an outer surface of a columnar element, wherein the inner conductor has a multi-layer electrode structure in which conductor layers and dielectric layers are alternately laminated, [and wherein] an outermost conductor layer of the inner conductor is greater in thickness than the other conductor layers of the inner conductor, and the other conductor layers of the inner conductor are substantially equal in thickness;

a dielectric element having a hole formed therein, the columnar element being disposed in the hole; and

an outer conductor formed on an outer surface of the dielectric element, wherein the outer conductor has a multi-layer electrode structure in which conductor layers and dielectric layers are alternately laminated, an outermost conductor layer of the outer conductor is greater in thickness than the other conductor layers of the outer conductor, and the other conductor layers of the outer conductor are substantially equal in thickness; and

an input/output device coupled to a predetermined coaxial resonator of the plurality of coaxial resonators.

10. (Amended) A duplexer comprising:

a transmission filter disposed between a transmission signal input port and a transmission/reception signal input/output port; and

a reception filter disposed between the transmission/reception signal input/output port and a reception signal output port,

wherein at least one of the transmission filter and the reception filter includes a plurality of coaxial resonators, each coaxial resonator comprising:

an inner conductor formed on an outer surface of a columnar element, wherein the inner conductor has a multi-layer electrode structure in which conductor layers and dielectric layers are alternately laminated, [and wherein] an outermost conductor layer of the inner conductor is greater in thickness than the other conductor layers of the inner conductor, and the other conductor layers of the inner conductor are substantially equal in thickness; ✓

a dielectric element having a hole formed therein, the columnar element being disposed in the hole; and

an outer conductor formed on an outer surface of the dielectric element, wherein the outer conductor has a multi-layer electrode structure in which conductor layers and dielectric layers are alternately laminated, an outermost conductor layer of the outer conductor is greater in thickness than the other conductor layers of the outer conductor, and the other conductor layers of the outer conductor are substantially equal in thickness; ✓ and

an input/output device coupled to a predetermined coaxial resonator of the plurality of coaxial resonators, the input/output device being coupled to a corresponding one of the ports.

11. (Amended) A communication device comprising:

a high-frequency circuit comprising a transmission circuit and a reception circuit; and

a duplexer comprising:

a transmission filter disposed between a transmission signal input port and a transmission/reception signal input/output port; and

a reception filter disposed between the transmission/reception signal input/output port and a reception signal output port,

wherein at least one of the transmission filter and the reception filter includes a plurality of coaxial resonators, each coaxial resonator comprising:

an inner conductor formed on an outer surface of a columnar element, wherein the inner conductor has a multi-layer electrode structure in which conductor layers and dielectric layers are alternately laminated, [and wherein] an outermost conductor layer of the inner conductor is greater in thickness than the other conductor layers of the inner conductor, and the other conductor layers of the inner conductor are substantially equal in thickness;

a dielectric element having a hole formed therein, the columnar element being disposed in the hole; and

an outer conductor formed on an outer surface of the dielectric element, wherein the outer conductor has a multi-layer electrode structure in which conductor layers and dielectric layers are alternately laminated, an outermost conductor layer of the outer conductor is greater in thickness than the other conductor layers of the outer conductor, and the other conductor layers of the outer conductor are substantially equal in thickness; and

an input/output device coupled to a predetermined coaxial resonator of the plurality of coaxial resonators and coupled to a corresponding one of the ports.

12. (Amended) A communication device comprising:
a high-frequency circuit comprising at least one of a transmission circuit and a reception circuit, the high-frequency circuit comprising:
a plurality of coaxial resonators, each coaxial resonator comprising:
an inner conductor formed on an outer surface of a columnar element, wherein the inner conductor has a multi-layer electrode structure in which conductor layers and dielectric layers are alternately laminated, [and wherein] an outermost conductor layer of the inner conductor is greater in thickness than the other conductor layers of the inner conductor, and the other conductor layers of the inner conductor are substantially equal in thickness;
a dielectric element having a hole formed therein, the columnar element being disposed in the hole; and
an outer conductor formed on an outer surface of the dielectric element, wherein the outer conductor has a multi-layer electrode structure in which conductor layers and dielectric layers are alternately laminated, an outermost conductor layer of the outer conductor is greater in thickness than the other conductor layers of the outer conductor, and the other conductor layers of the outer conductor are substantially equal in thickness; and
an input/output device coupled to a predetermined coaxial resonator of the plurality of coaxial resonators.

21. (New) A coaxial resonator comprising:
an inner conductor formed on an outer surface of a columnar element;
a dielectric element having a hole formed therein, the columnar element being disposed in the hole; and

an outer conductor formed on an outer surface of the dielectric element,
wherein the inner conductor has a multi-layer electrode structure in which
conductor layers and dielectric layers are alternately laminated and wherein the
conductor layers of the inner conductor gradually decrease in thickness from an inner
most conductor layer toward an outermost conductor layer, and

wherein the outer conductor has a multi-layer electrode structure in which
conductor layers and dielectric layers are alternately laminated and wherein the
conductor layers of the inner conductor gradually increase in thickness from an inner
most conductor layer toward an outermost conductor layer.

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